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EXAMINER	
GILLESPIE, BENJAMIN	

ART UNIT	PAPER NUMBER
1796	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/565,539	HENZE ET AL.	
	Examiner	Art Unit	
	BENJAMIN J. GILLESPIE	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 December 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-9 and 11-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2 4-9 11-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/2/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(b) that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-2, 6, 11-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Rizk et al ('053). Risk et al teach modified polyurethane having terminal silane groups and a method for its product comprising the reaction product of (A) a polyurethane intermediate and (B) isocyanate-functional silane compounds, wherein the resulting modified polyurethane is cured through exposure to moisture in the air, and component (B) consists of γ-isocyanatopropyl trimethoxysilane and γ-isocyanatopropyltriethoxysilane (Abstract; col 4 lines 38-42, 49-57).

2. Regarding the limitations of claim 3, patentees explain that (A) has a molecular weight ranging from 3,000 to 18,000, has two pendant active hydrogen groups, and therefore the final polyurethane has two pendant silane groups (Col 2 lines 30-48; col 4 lines 29-37). Therefore based on the molecular weight range and functionality of (A), and the molecular weight of (B), would inherent satisfy applicants' claimed range. Finally, regarding the limitations of claim 11, example 3 shows a 1:1 equivalent ratio of silane modified polyisocyanate and silane-excluded polyisocyanate.

3. Claims 1-2, 6, and 11-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnston et al ('257). Johnston et al teach modified polyurethane having terminal silane groups and a method for its product comprising the reaction product of (A) a polyurethane intermediate and (B) isocyanate-functional silane compounds, wherein the resulting modified polyurethane is

cured through exposure to moisture in the air, and component (B) consists of γ-isocyanatopropyltrimethoxysilane and γ-isocyanatopropyltriethoxysilane (Abstract; col 4 lines 20-39). Regarding the limitations of claim 3, patentees teach in examples 3, 4, and 5 reaction systems comprising hydroxyl functional prepolymers having two pendant active hydrogen groups reacted with (B) in a stoichiometric ratio of 1:1 for NCO:OH groups, therefore the position is taken that about of (B) is inherently satisfied by Johnston et al. Finally, regarding the limitations of claim 11, example 3 shows a 1.2:1 equivalent ratio of silane modified polyisocyanate and silane-excluded polyisocyanate.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 4 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rizk et al ('053) or in the alternative Johnston et al ('257) in view of Mowrer et al ('155).

Aforementioned both Rizk et al and Johnston et al teach modified polyurethane having terminal silane groups, wherein said modified polyurethane is cured via exposure to moisture, however patentees fail to disclose the modified polyurethane as being useful in producing hoses, or cable sheathing.

6. Mowrer et al also teach modified polyurethane having terminal silane groups, wherein said polyurethane is cured via exposure to moisture (Abstract). In particular, patentees teach that since the polymer cures by hydrolysis of the alkoxysilane end groups, there is less carbon dioxide generated (Col 2 lines 58-65). This decreases the amount of bubbles present in the final polymer and hence said modified polyurethane is useful the production of hoses (Col 8 lines 44-56).

7. Therefore, it would have been obvious to utilize the modified polyurethane of Rizk et al and Johnston et al in the production of hoses since Mowrer et al teach silane terminated polyurethane is preferred because it reduces the amount of unwanted bubbling and in obviousness rejections based on close similarity in chemical structure, the necessary motivation to make a claimed compound and thus the prima facie case of obviousness, rises form the expectation that compounds similar structure will have similar properties. *In re Gyurick,* 596 F.2d 1012, 201 USPQ 552 (CCPA 1979). Furthermore, the examiner has taken the position that the physical structure of a "hose" to also applies to "cable sheathing."

8. Claims 4, 7, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rizk et al ('053) or in the alternative Johnston et al ('257) each in view of Shah et al ('257). Aforementioned both Rizk et al and Johnston et al teach modified polyurethane having terminal

silane groups, wherein said modified polyurethane is cured via exposure to moisture; however patentees fail to disclose the modified polyurethane as being useful in producing fibers.

9. Shah et al also teach modified polyurethane having terminal silane groups, wherein said polyurethane is cured via exposure to moisture (Abstract; col 1 lines 51-61). In particular, patentees explain that since these cured compositions exhibit superior stretch and recovery characteristics, they are useful in the production of spun elastomeric fibers (Col 2 lines 21-24). Therefore, it would have been obvious to spin fibers based on the modified polyurethane of Rizk et al and Johnston et al since Shah et al teach such compositions are useful in those applications because they have preferred elastomeric behavior and in obviousness rejections based on close similarity in chemical structure, the necessary motivation to make a claimed compound and thus the prima facie case of obviousness, rises form the expectation that compounds similar structure will have similar properties. *In re Gyurick,* 596 F.2d 1012, 201 USPQ 552 (CCPA 1979). Furthermore, the examiner has taken the position that the physical structure of a "hose" to also applies to "cable sheathing."

10. Regarding the mechanical properties of claims 17-20, although not explicitly disclosed by the prior art, based on an analogous composition and application, it is the examiner's position that one would reasonably expect the method for producing the silane-modified thermoplastic polyurethane to produce fibers exhibiting properties that satisfy the claimed ranges.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rizk et al ('053) or in the alternative Johnston et al ('257) each in view of Mowrer et al ('155) and in further view of Furukawa et al ('767). Aforementioned, the prior art renders obvious a modified polymer having pendant silane groups based on γ-isocyanatopropyltrimethoxysilane and γ-

isocyanatopropyltriethoxysilane, which is cured via exposure to moisture. Patentees fail, however, to disclose cure catalyst corresponding to claim 5.

12. Furukawa et al also teach a polymer having pendant silane groups based on γ-isocyanatopropyltrimethoxysilane and γ-isocyanatopropyltriethoxysilane and in particular patentees explain that these functional groups are cured by exposure to moisture and preferably with the aid of toluenesulfonic acid catalyst (Abstract; col 4 lines 49-60; col 5 lines 5-14; col 8 lines 51-58). Therefore it would have been obvious to include the cure catalyst of Furukawa et al in the polyurethane systems of Rizk et al and Johnston et al since it is disclosed as being useful in aiding the cure of analogous silane functional polymers, and it is prima facie obvious to add a known ingredient for its known function. *In re Linder* 173 USPQ 356; *In re Dial et al* 140 USPQ 244.

13. Finally, it is noted that the polymer backbone of Furukawa et al is a polyurethane, the examiner takes the position that it still would have been obvious to utilize the relied upon catalyst since its selection is only based on its interaction with moisture and the silane functional groups, which are identical to those of Rizk et al and Johnston et al.

14. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rizk et al ('053) or in the alternative Johnston et al ('257) each in view of Shah et al ('257) and in further view of Furukawa et al ('767). As previously discussed, the prior art renders obvious a modified polymer having pendant silane groups based on γ-isocyanatopropyltrimethoxysilane and γ-isocyanatopropyltriethoxysilane, which is cured via exposure to moisture. Patentees fail, however, to disclose cure catalyst corresponding to claim 5.

15. Furukawa et al also teach a polymer having pendant silane groups based on γ-isocyanatopropyltrimethoxysilane and γ-isocyanatopropyltriethoxysilane and in particular patentees explain that these functional groups are cured by exposure to moisture and preferably with the aid of toluenesulfonic acid catalyst (Abstract; col 4 lines 49-60; col 5 lines 5-14; col 8 lines 51-58). Therefore it would have been obvious to include the cure catalyst of Furukawa et al in the polyurethane systems of Rizk et al and Johnston et al since it is disclosed as being useful in aiding the cure of analogous silane functional polymers, and it is prima facie obvious to add a known ingredient for its known function. *In re Linder* 173 USPQ 356; *In re Dial et al* 140 USPQ 244.

16. Finally, it is noted that the polymer backbone of Furukawa et al is a polyurethane, the examiner takes the position that it still would have been obvious to utilize the relied upon catalyst since its selection is only based on its interaction with moisture and the silane functional groups, which are identical to those of Rizk et al and Johnston et al.

Response to Arguments

17. Applicant's arguments filed 12/02/2008 have been fully considered but they are not persuasive. Applicants argue the currently claimed invention is not anticipated nor rendered obvious because Rizk et al and Johnston et al fail to teach a process comprising the reaction of isocyanate-reactive polymer and polyisocyanate, wherein said polyisocyanate comprises both silane containing and silane excluding compounds; the examiner disagrees.

18. Rizk et al and Johnston et al clearly teach a method for producing silane terminated polyurethane comprising the reaction product of polyether polyol and polyisocyanate, wherein said polyisocyanate comprises compounds both containing silane and excluding silane groups. It

is noted that neither Rizk et al nor Johnston et al teach a simultaneous reaction of polyol and (silane containing polyisocyanate + silane excluding polyisocyanate), however, the claims are not limited to this interpretation.

19. The language "reacting an isocyanate component and a component reactive toward isocyanates capable of forming a polyurethane therewith, wherein said isocyanate component comprises an isocyanate having no silane group and a silane which has an isocyanate group" merely requires the polyol to be reacted *at some point* with a silane-excluding polyisocyanate and *at some point* with a silane containing polyisocyanate which, as previously discussed, is met by the prior art.

Conclusion

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

21. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN J. GILLESPIE whose telephone number is (571)272-2472. The examiner can normally be reached on 8am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

23. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rabon Sergent/
Primary Examiner, Art Unit 1796

B. Gillespie